

Description

STREET SWEEPER GUIDE BAR

BACKGROUND OF INVENTION

[0001] The present invention relates to a street sweeper guide.

[0002] Street sweeping machines typically are vehicles having a rotating brush system for sweeping debris into a receptacle. It is necessary to provide sweeper guides, also known as drag shoes, to contain dust and debris laterally as the street sweeper moves forward along the street. Sweeper guides may be made of a metal such as steel and have good wear and strength characteristics. However, most street surfaces are not uniformly level and some flexibility is desirable. Therefore, some guides are fashioned from rubber or other resilient materials. These guides have the desired flexibility but are susceptible to damage and quick wear.

[0003] Therefore, there is a need in the art for a sweeper guide which combines the wear resistance of a metal guide with the flexibility of a rubber guide.

SUMMARY OF INVENTION

[0004] In one aspect, the invention may comprise a sweeper guide comprising:

[0005] (a) a body comprised of a resilient material and having a lower edge;

[0006] (b) a plurality of metal bars formed within the body adjacent the lower edge, wherein each metal insert is comprised of a metal body defining a channel and a wear-resistant insert disposed within the channel; and wherein the metal bars are spaced along the lower edge with rubber material between two adjacent metal inserts.

[0007] In another aspect, the invention may comprise a method of manufacturing a sweeper guide including a rubber body having a lower edge, comprising the steps of:

[0008] (a) making a plurality of metal bars, each comprising a carbide insert;

[0009] (b) vulcanizing the metal bars within the rubber body, such that the metal bars are adjacent the lower edge and are spaced apart.

BRIEF DESCRIPTION OF DRAWINGS

[0010] The invention will now be described by way of an exemplary embodiment with reference to the accompanying

simplified, diagrammatic, not-to-scale drawings.

[0011] Figure 1 is a side view of one embodiment of the present invention.

[0012] Figure 2 is a bottom view.

[0013] Figure 3 is a cross-section along line III in Figure 1.

DETAILED DESCRIPTION

[0014] The present invention provides for a sweeper guide. When describing the present invention, all terms not defined herein have their common art-recognized meanings.

[0015] A guide of the present invention is shown in Figure 1. The main body (10) of the guide is formed of a resilient material such as rubber, which provides the guide with some flexibility. Other suitable resilient materials include various plastics such as polyurethane. Bolt holes are provided along the top edge (12) of the body (10) for fastening to a street sweeping vehicle (not shown). The bottom edge (14) which is the ground contacting surface comprises a plurality of metal bars (16) which have a lower edge substantially level with the bottom edge (14). A forward edge (20) of the guide may optionally be angled in a preferred embodiment, as is shown in Figure 1.

[0016] In one embodiment, each metal bar (16) comprises a rect-

angular block of steel having a groove milled into a lower edge. A wear-resistant material such as a ceramic is inserted into the groove. In the embodiment shown, a tungsten carbide plug (18) is brazed into the groove. Each metal bar (16) is rectangular and may be about 3 inches long and about 1.25 inches high. In a preferred embodiment, the metal bars (16) are spaced apart so that an appreciable amount of resilient material separates the metal bars (16). If the metal bars are about 3 inches long, the spacing may be about 0.75 inches in one embodiment. In other words, the spacing is about 25% of the length of the metal bar. This spacing ensures the guide remains flexible in the longitudinal direction.

[0017] A guide (10) which comprises 8 metal bars (16) each about 3 inches with 0.75 inch spacing may be about 30 inches long. Therefore, approximately 80% ($3.00/3.75$) of the longitudinal length of the guide (10) is comprised of the metal bars (16). As will be apparent to one skilled in the art, greater spacing between the metal bars will result in less metal along the lower edge, resulting in a guide having greater flexibility but lesser wear resistance. Conversely, reduced spacing will result in a guide having less flexibility but greater wear resistance. In one embodiment,

the longitudinal length of the guide may be comprised of about 50% to about 95% metal/carbide.

[0018] The metal bars (16) may be conveniently made from a long steel piece which has a groove milled into one edge which is cut into sections and then tungsten carbide plugs may then be inserted and brazed into place. Alternatively, the tungsten carbide plugs may be inserted and brazed prior to cutting the steel piece into sections. The guide itself may preferably be formed by vulcanizing the rubber with the metal bars (16) in place rather than creating openings into a pre-formed rubber body and inserting the metal bars, as is known in the prior art. Vulcanizing the rubber around the metal bars bonds the metal bars into place within the guide. If the resilient material of the guide is a plastic material, the plastic may be molded or cured with the metal bars in place to create the same effect.

[0019] As will be apparent to those skilled in the art, various modifications, adaptations and variations of the foregoing specific disclosure can be made without departing from the scope of the invention claimed herein. The various features and elements of the described invention may be combined in a manner different from the combinations

described or claimed herein, without departing from the scope of the invention.